

**Circulation Research****VOLUME 58****JANUARY-JUNE 1986****VOLUME AUTHOR INDEX**

Abboud, F.M., 1  
 Agarwal, J.B., 209  
 Akaishi, M., 209  
 Alexander, R.W., 393  
 Allessie, M.A., 96  
 Alyono, D., 47  
 Anderson, R.W., 47  
 Antzelevitch, C., 257  
 Anversa, P., 26  
 Apstein, C.S., 653  
 Armstrong, M.L., 783

Bache, R.J., 47  
 Ballermann, B.J., 619  
 Bardenheuer, H., 193  
 Bassett, A.L., 202  
 Beghi, C., 26  
 Benedict, C.R., 58  
 Berkoff, H.A., 157  
 Bernier, M., 331  
 Bers, D.M., 769  
 Bevan, J.A., 867  
 Bevan, R.D., 867  
 Beyar, R., 664  
 Bhattacharya, J., 512  
 Bishop, V.S., 882  
 Bittl, J.A., 378  
 Bitto, T., 298  
 Blanchard, E.M., 721  
 Bogdan, I., 605  
 Böhme, E., 531  
 Bonke, F.I.M., 96  
 Bonsignore, M.R., 269  
 Bossaller, C., 305  
 Brenner, B.M., 619  
 Brill, D.M., 109  
 Brooks, V.L., 829, 816  
 Bux, J.J., 755  
 Burnstock, G., 319  
 Busse, R., 531

Campbell, G.R., 427  
 Campbell, J.H., 427  
 Capasso, J.M., 445  
 Caprette, D.R., 120  
 Cartwright, J., Jr., 58  
 Champion, W.J., 874  
 Chen, X.-L., 476  
 Chilian, W.M., 68  
 Choy, M., 570  
 Clowes, A.W., 839  
 Clowes, M.M., 839  
 Cobb, F.R., 281  
 Coburn, R.F., 341  
 Coene, M.-C., 552  
 Coleman, R.E., 281  
 Coleridge, H.M., 512  
 Coleridge, J.C.G., 512  
 Colucci, W.S., 292, 393  
 Constantinescu, E., 605  
 Cooper, G., IV, 692  
 Corr, P.B., 230  
 Cousineau, D., 859

Cummins, P., 846

Dai, X.-Z., 47  
 Davidenko, J.M., 257  
 Davison, R., 166  
 DiBona, G.F., 241  
 Dodek, P.M., 269  
 Dolber, P.C., 356  
 Driscoll, E.M., 218  
 Dunham, W.R., 570  
 Durán, W.N., 348  
 Dusting, G.J., 172  
 Dysko, R.C., 570

Eastham, C.L., 38  
 Engelmann, G.L., 137  
 Entman, M.L., 120  
 Eppinger, R., 341  
 Evans, J.N., 399

Feldman, R.D., 384  
 Ferguson, A.G., 166  
 Ferrier, G.R., 486  
 Förstermann, U., 531  
 Frame, L.H., 495  
 Freiman, P.C., 783  
 Fuchs, E., 389

Gaide, M.S., 202  
 Gallagher, K.P., 570  
 Ganote, C.E., 166  
 Gawlowksi, D.M., 348  
 Gerren, R.A., 570  
 Gerrity, R.G., 137  
 Gerstenblith, G., 539  
 Gill, R.M., 584  
 Gilmour, R.F., Jr., 584  
 Gimbrone, M.A., Jr., 393  
 Gordon, P.R., 692  
 Goresky, C.A., 859  
 Goto, M., 476

Habib, J.B., 305  
 Haidet, G.C., 523  
 Hammond, R.L., 298  
 Harder, D.R., 565  
 Harrison, D.G., 68, 783  
 Haworth, R.A., 157  
 Haws, C.W., 68  
 Hearse, D.J., 331  
 Heistad, D.D., 783  
 Helfant, R.H., 209  
 Heltsianu, C., 605  
 Henry, P.D., 305  
 Herman, A.G., 552  
 Higginbotham, M.B., 281  
 Hiramatsu, O., 476  
 Hoerter, J.A., 539  
 Hoffman, B.F., 495  
 Hollen, J., 96  
 Hooper, J.K., 692  
 Hubbard, M.S., 399

Imazumi, T., 17  
 Ingwall, J.S., 378  
 Israel, A., 389  
 Ito, K., 730

Jackson, C.V., 218  
 Jacobus, W.E., 539  
 Jalife, J., 706  
 Jones, S., 241  
 Jordaeans, F.H., 552

Kajiyama, F., 476  
 Karmazyn, M., 486  
 Keil, L.C., 829  
 Kennedy, C., 319  
 Kent, R.L., 692  
 Kentish, J.C., 755  
 Kikkawa, Y., 26  
 Kimura, S., 202  
 Kleber, A.G., 249  
 Klein, L.W., 209  
 Klener, R.A., 148  
 Knabb, M.T., 230  
 Koepke, J.P., 241  
 Kozlovskis, P.L., 202  
 Kumar, P., 721  
 Kunkel, S.L., 218  
 Kurihara, M., 389

Lai, C.-Y.C., 384  
 Lakatta, E.G., 539  
 Lambert, S.J., 846  
 Lammers, W.J.E.P., 96  
 Lauva, I.K., 692  
 Levi, R., 1  
 Lew, W.Y.W., 678  
 LeWinter, M.M., 678  
 Li, D.M.F., 172  
 Liard, J.-F., 631  
 Lin, L.E., 83  
 Lombard, J.H., 565  
 Lorell, B.H., 653  
 Lucchesi, B.R., 218  
 Lund, D.D., 372

MacLeod, K.T., 769  
 Madden, J.A., 565  
 Malhotra, A., 445  
 Manning, A.S., 331  
 Mannion, J.D., 298  
 Marcus, M.L., 38, 68  
 Marino, T.A., 692  
 Martin, A.F., 721  
 Mathew, B., 58  
 Matyas, E.P., 706  
 McClellan, G., 83, 790  
 McDonagh, P.F., 127  
 McHale, P.A., 281  
 McManimon, S.P., 570  
 Mercer, E., 692  
 Miceli, M.V., 539  
 Michaels, D.C., 706

**Circulation Research****VOLUME 58****JANUARY-JUNE 1986****VOLUME AUTHOR INDEX**

Abboud, F.M., I  
 Agarwal, J.B., 209  
 Akaishi, M., 209  
 Alexander, R.W., 393  
 Allessie, M.A., 96  
 Alyono, D., 47  
 Anderson, R.W., 47  
 Antzelevitch, C., 257  
 Anversa, P., 26  
 Apstein, C.S., 653  
 Armstrong, M.L., 783

Bache, R.J., 47  
 Ballermann, B.J., 619  
 Bardenheuer, H., 193  
 Bassett, A.L., 202  
 Beghi, C., 26  
 Benedict, C.R., 58  
 Berkoff, H.A., 157  
 Bernier, M., 331  
 Bers, D.M., 769  
 Bevan, J.A., 867  
 Bevan, R.D., 867  
 Beyar, R., 664  
 Bhattacharya, J., 512  
 Bishop, V.S., 882  
 Bittl, J.A., 378  
 Bitto, T., 298  
 Blanchard, E.M., 721  
 Bogdan, I., 605  
 Böhme, E., 531  
 Bonke, F.I.M., 96  
 Bonsignore, M.R., 269  
 Bossaller, C., 305  
 Brenner, B.M., 619  
 Brill, D.M., 109  
 Brooks, V.L., 829, 816  
 Bux, J.J., 755  
 Burnstock, G., 319  
 Busse, R., 531

Campbell, G.R., 427  
 Campbell, J.H., 427  
 Capasso, J.M., 445  
 Caprette, D.R., 120  
 Cartwright, J., Jr., 58  
 Champion, W.J., 874  
 Chen, X.-L., 476  
 Chilian, W.M., 68  
 Choy, M., 570  
 Clowes, A.W., 839  
 Clowes, M.M., 839  
 Cobb, F.R., 281  
 Coburn, R.F., 341  
 Coene, M.-C., 552  
 Coleman, R.E., 281  
 Coleridge, H.M., 512  
 Coleridge, J.C.G., 512  
 Colucci, W.S., 292, 393  
 Constantinescu, E., 605  
 Cooper, G., IV, 692  
 Corr, P.B., 230  
 Cousineau, D., 859

Cummins, P., 846

Dai, X.-Z., 47  
 Davidenko, J.M., 257  
 Davison, R., 166  
 DiBona, G.F., 241  
 Dodek, P.M., 269  
 Dolber, P.C., 356  
 Driscoll, E.M., 218  
 Dunham, W.R., 570  
 Durán, W.N., 348  
 Dusting, G.J., 172  
 Dysko, R.C., 570

Eastham, C.L., 38  
 Engelmann, G.L., 137  
 Entman, M.L., 120  
 Eppinger, R., 341  
 Evans, J.N., 399

Feldman, R.D., 384  
 Ferguson, A.G., 166  
 Ferrier, G.R., 486  
 Förstermann, U., 531  
 Frame, L.H., 495  
 Freiman, P.C., 783  
 Fuchs, E., 389

Gaide, M.S., 202  
 Gallagher, K.P., 570  
 Ganote, C.E., 166  
 Gawlowksi, D.M., 348  
 Gerren, R.A., 570  
 Gerrity, R.G., 137  
 Gerstenblith, G., 539  
 Gill, R.M., 584  
 Gilmour, R.F., Jr., 584  
 Gimbrone, M.A., Jr., 393  
 Gordon, P.R., 692  
 Goresky, C.A., 859  
 Goto, M., 476

Habib, J.B., 305  
 Haidet, G.C., 523  
 Hammond, R.L., 298  
 Harder, D.R., 565  
 Harrison, D.G., 68, 783  
 Haworth, R.A., 157  
 Haws, C.W., 68  
 Hearse, D.J., 331  
 Heistad, D.D., 783  
 Helfant, R.H., 209  
 Heltsianu, C., 605  
 Henry, P.D., 305  
 Herman, A.G., 552  
 Higginbotham, M.B., 281  
 Hiramatsu, O., 476  
 Hoerter, J.A., 539  
 Hoffman, B.F., 495  
 Hollen, J., 96  
 Hooper, J.K., 692  
 Hubbard, M.S., 399

Imazumi, T., 17  
 Ingwall, J.S., 378  
 Israel, A., 389  
 Ito, K., 730

Jackson, C.V., 218  
 Jacobus, W.E., 539  
 Jalife, J., 706  
 Jones, S., 241  
 Jordaeans, F.H., 552

Kajiyama, F., 476  
 Karmazyn, M., 486  
 Keil, L.C., 829  
 Kennedy, C., 319  
 Kent, R.L., 692  
 Kentish, J.C., 755  
 Kikkawa, Y., 26  
 Kimura, S., 202  
 Kleber, A.G., 249  
 Klein, L.W., 209  
 Klener, R.A., 148  
 Knabb, M.T., 230  
 Koepke, J.P., 241  
 Kozlovskis, P.L., 202  
 Kumar, P., 721  
 Kunkel, S.L., 218  
 Kurihara, M., 389

Lai, C.-Y.C., 384  
 Lakatta, E.G., 539  
 Lambert, S.J., 846  
 Lammers, W.J.E.P., 96  
 Lauva, I.K., 692  
 Levi, R., 1  
 Lew, W.Y.W., 678  
 LeWinter, M.M., 678  
 Li, D.M.F., 172  
 Liard, J.-F., 631  
 Lin, L.E., 83  
 Lombard, J.H., 565  
 Lorell, B.H., 653  
 Lucchesi, B.R., 218  
 Lund, D.D., 372

MacLeod, K.T., 769  
 Madden, J.A., 565  
 Malhotra, A., 445  
 Manning, A.S., 331  
 Mannion, J.D., 298  
 Marcus, M.L., 38, 68  
 Marino, T.A., 692  
 Martin, A.F., 721  
 Mathew, B., 58  
 Matyas, E.P., 706  
 McClellan, G., 83, 790  
 McDonagh, P.F., 127  
 McHale, P.A., 281  
 McManimon, S.P., 570  
 Mercer, E., 692  
 Miceli, M.V., 539  
 Michaels, D.C., 706

Mitchell, G.G., 783  
Mitchell, J.H., 523  
Mito, K., 476  
Moffat, M.P., 486  
Momomura, S.-I., 653  
Morgan, W.W., 882  
Morris, K.G., 281  
Morissett, J.D., 305  
Mülsch, A., 531  
Murphy, R.A., 803  
Musch, T.I., 523  
Myerburg, R.J., 202

Nagae, M., 890  
Nakai, M., 476  
Nakanishi, T., 890  
Navar, L.G., 874  
Noble, M.I.M., 755

Oda, R.P., 372  
Ogasawara, Y., 476  
Olivetti, G., 26  
Ordway, G.A., 523

Page, R.L., 495  
Palmer, P.J., 38  
Pardini, B.J., 372  
Parrish, D.G., 47  
Peiffer, G.L., 38  
Przyklenk, K., 148  
Purchase, M., 172

Rapoport, R.M., 407  
Read, M.A., 172  
Reid, I.A., 829, 816  
Rembold, C.M., 803  
Renlund, D.G., 539  
Rex, K.A., 58  
Ricciardi, L., 755  
Rice, T.W., 269

Roberge, F.A., 461  
Roberts, A.M., 512  
Roberts, D.J., 127  
Rose, C.P., 859  
Rubinstein, N.A., 298

Saavedra, J.M., 389  
Saffitz, J.E., 230  
Salata, J.J., 584  
Samarel, A.M., 166  
Sato, K., 730  
Scheuer, J., 445  
Schmid, P.G., 372  
Schneider, R.M., 209  
Schreiber, K.L., 38  
Schultz, H.D., 512  
Schumacher, W.A., 218  
Schwartz, S.M., 427  
Scott, D.P., 341  
Sideman, S., 664  
Simionescu, M., 605  
Smeda, J., 565  
Smeets, J.L.R.M., 96  
Snyder, W.D., 68  
Sobel, B.E., 230  
Solaro, R.J., 721  
Somlyo, A.P., 790  
Sonnenblick, E.H., 445  
Sordahl, L.A., 58  
Spach, M.S., 356  
Sparks, H.V., Jr., 193  
Staub, N.C., 269  
Stephenson, L.W., 298  
Stirling, M.C., 570  
Stray-Gundersen, J., 523  
Sutko, J.L., 730  
Swain, D.P., 523  
Szarek, J.L., 399

Tadaoka, S., 476  
Takakura, S., 730

Takao, A., 890  
Tayo, F.M., 867  
ter Keurs, H.E.D.J., 755  
Thames, M.D., 17  
Thomas, C.E., 874  
Todd, M.E., 641  
Tomanek, R.J., 38  
Tomonaga, G., 476  
Trapani, A.J., 882  
Tsujioka, K., 476

Undesser, K.P., 882

Vander Heide, R.S., 166  
Van Hove, C.E., 552  
Van Winkle, W.B., 120  
Verbeuren, T.J., 552  
Victori, B., 461  
Vinet, A., 461  
Vitullo, J.C., 137

Wada, Y., 476  
Warshaw, D.M., 399  
Wasserman, A.J., 790  
Wasserstrom, J.A., 109  
Weinberg, E., 653  
Weintraub, W.S., 209  
Weisberg, A., 83  
Wells, S., 305  
Wexler, L.F., 653  
Wiggins, R.C., 595  
Wilde, A.A.M., 249  
Williams, C., 305  
Williams, R.S., 281  
Winegrad, S., 83  
Wolff, A.A., 1

Yamada, S., 269

Zipes, D.P., 584  
Zonnekeyn, L.L., 552

VOLUME 58

## Circulation Research

JANUARY-JUNE 1986

## VOLUME SUBJECT INDEX

**A**

**Acetylcholine**  
adenosine formation, regulation, heart, 193  
endothelium-derived factor, guanylate cyclase stimulation, arteries, 531  
regional turnover, vagal nerve stimulation effects, heart, 372  
**thrombin**, atherosclerosis, endothelium-dependent vascular relaxation, 783

**Acetyl-glycerol-ether phosphorylcholine**, platelet-activating factor, coronary artery vasodilator substance, 218

**Acetylstrophanthidin**, endogenous prostaglandins, canine ventricular tissues, 486

**Acidosis**, hypoxia and high potassium, intracellular sodium activity and resting potential, papillary muscle, 249

**Action potentials**  
myocardial performance, hypertension, aging, 445  
myogenic depolarization and contraction, middle cerebral artery, 565

**Actomyosin**, adrenergic regulation, 83

**Acylic carnitine**, endogenous long-chain, electrophysiological derangements, hypoxic myocytes, 230

**Adenosine**  
bradykinin and, microvascular permeability selectivity, macromolecules, 348  
coronary vasodilation, left ventricular hypertrophy secondary to valvular aortic stenosis, 47  
formation, heart, 193

**Adenosine triphosphatase**  
contractile protein, developmental changes, heart, 890  
induced calcium alterations, phosphorus-31 nuclear magnetic resonance study, 539  
myocardial performance, hypertension, aging, 445  
myosin, adrenergic regulation of activity, 83

**Adenosine triphosphate**  
dual function, vascular tone regulation, 319  
glucose transport and, adult heart cells, 157  
synthesis, noncontracting heart, 378

**Adenylate cyclase**,  $\beta$ -adrenergic receptor characterization, photoaffinity labeling, 384

**Adrenergic fibers**, anterior eye chamber transplants, nerves and blood vessels, trophic interactions, 641

**Adrenergic receptors**, catecholamines, coronary vasoconstriction and, 68

$\alpha$ -**Adrenergic receptors**

hypothalamic  $\beta_2$ -adrenoceptor control, renal sympathetic nerve activity, urinary sodium activity, 241  
phorbol ester modulation, calcium efflux, vascular smooth muscle cells, 393  
postjunctional, postnatal growth, arteries, 867

$\alpha_1$ -**Adrenergic receptors**, number regulation, cyclic adenosine monophosphate, vascular smooth muscle, 292

$\beta_2$ -**Adrenergic receptors**  
hypothalamic control, renal sympathetic nerve activity, urinary sodium excretion, 241

**Adrenergic regulation**, myosin ATPase, 83

**Adrenocorticotrophic hormone**, secretion, baroreceptor reflex, angiotensin II and heart rate, 816

**Aequorin**, crossbridge cycle regulation, myoplasmic calcium and myosin phosphorylation, arterial smooth muscle, 803

**Afferents**, pulmonary vagal, C-fibers, stimulation and lung edema, 512

**AGEPC**: see Acetyl-glycerol-ether phosphorylcholine

**Aging**  
anisotropic propagation, extracellular potentials, cardiac muscle, 356  
myocardial performance, hypertension, 445  
ploidy levels, cardiac myocytes, 137

**Aldosterone**, arterial peptides, body fluid homeostasis, 619

**Allopurinol**, arrhythmias, reperfusion-induced, oxygen-derived free radicals, 331

**Anaphylaxis**, histamine release, arrhythmias resulting from, 1

**Angiotensin II**  
baroreceptor reflex, adrenocorticotrophic hormone secretion, heart rate, 816  
calcium channel blockade effects, renal vascular resistance, angiotensin-converting enzyme inhibition, 874  
renin-angiotensin system, vasopressin secretion, 829

**Anisotropic heart muscle**: see Cardiac muscle

**Anoxia**, sugar uptake, control of, adult heart cells, 157

**Arachidonic acid**, metabolism, thromboxane A<sub>2</sub> release and, platelets, isolated heart, 172

**Arrhythmias**  
cardiac, histamine and, 1  
reentrant, wavelength and, atrium, 96  
reperfusion-induced, free radicals, oxygen-derived, 331

sinoatrial node, pacemaker cells, math-

ematical model, 706  
ventricular, acetylstrophanthidin effects, endogenous prostaglandins, 486

**Arrhythmogenesis**, acyl carnitine, electrophysiological derangements, hypoxic myocytes, 230

**Arteries**: see also specific artery  
denervated peripheral, nerves and blood vessels, trophic interactions in anterior eye chamber transplants, 641

guanylate cyclase stimulation, endothelium-derived factor, acetylcholine-induced, 531

**hypercholesterolemia effect**, vascular reactivity, 552

postjunctional  $\alpha$ -adrenoceptors, postnatal growth, 867

**Arterioles**, coronary, morphometry, left ventricular hypertrophy, 38

**Arteriosclerosis**, heparin inhibition, smooth muscle mitogenesis and migration, 839

**Artherosclerosis**  
calcium blocker PN200110, vascular relaxation, endothelium-derived, 305

endothelium-dependent vascular relaxation, acetylcholine, thrombin, 783

**hypercholesterolemia effect**, vascular reactivity, 552

smooth muscle cells, replication, 427

**ATPase**: see Adenosine triphosphatase

**Atrial fibers**, histamine effects, 1

**Atrial fibrillation**, wavelength of cardiac impulse, reentrant arrhythmias and, 96

**Atrial flutter**  
refractory excitable gap, atrial reentry, anatomic barrier, 495  
wavelength of cardiac impulse, reentrant arrhythmias and, 96

**Atrial natriuretic factor**, binding sites, subfornical organ in spontaneous hypertension, 389

**Atrial natriuretic peptide**, role, body fluid homeostasis, 619

**Atrioventricular node cells**  
conduction  
heart rate, phasic changes and sympathetic tone, 584  
slowing, histamine and, 1

**Atrium**, myosin transitions, bovine and human heart, 846

**Atropine**, guanylate cyclase stimulation, endothelium-derived factor, acetylcholine-induced, 531

**Autonomic nervous system**, heart rate, phasic changes and sympathetic tone, atrioventricular node conduction, 584

**Autoradiography**  
 acyl carnitine, electrophysiological derangements, hypoxic myocytes, 230  
 cultured cardiocytes, 692

**B**

**Baroreceptor reflex**  
 angiotensin II, adrenocorticotrophic hormone secretion, heart rate, 816  
 potentiation, central catecholamines, vasopressin, 882  
 renin-angiotensin system, vasopressin secretion, 829

**Biochemistry, cultured cardiocytes**, 692

**Blood flow:** *see also Microcirculation*  
 coronary  
     adenosine formation, regulation, 193  
     serotonin effects, 58  
     submaximal exercise, circulating catecholamines and, 68  
 myocardial  
     acute ischemia, lateral border, functional impairment, 570  
     left ventricular hypertrophy secondary to valvular aortic stenosis, 47  
     vasopressin, antidiuretic activity, dehydration, 631

**Blood pressure**, angiotensin II, baroreceptor reflex, adrenocorticotrophic hormone secretion, 816

**Blood vessels, nerves and, trophic interactions**, anterior eye chamber transplants, 641

**Bradykinin**  
 adenosine and, microvascular permeability, macromolecules, 341  
 kininogen, dextran sulfate injection, cleavage site, 595

**Brain**  
 angiotensin II, baroreceptor reflex, adrenocorticotrophic hormone secretion, 816  
 atrial natriuretic peptide, binding sites, spontaneous hypertension and, 389

**C**

**Caffeine**, ryanodine, inhibited calcium release, aortic smooth muscle, 730

**Calcium**  
 activation, differential pH effects, myofilaments, 721  
 efflux, cyclic adenosine monophosphate,  $\alpha_1$ -adrenergic receptor number regulation, 292  
 extracellular, cumulative depletions, ventricular muscle, 769  
 inhibited release, ryanodine, aortic smooth muscle, 730  
 metabolism, clathrin with microsomes, myocardium, 120  
 myoplasmic, myosin phosphorylation, crossbridge cycle, 803  
 paradox, myosin light chain 1 following, heart, 166  
 sodium and magnesium transport, cellular and subcellular, vascular smooth muscle, 790

**Calcium antagonist**, PN200110, vascular relaxation, endothelium-derived, 305

**Calcium blocker**  
 channel, renal vascular resistance, per-

fusion pressure, angiotensin-converting enzyme inhibition, 874  
 entry, transcoronary macromolecular leakage, 127  
 vascular relaxation, endothelium derived, 305

**Calcium ions**  
 induced alterations, phosphorus-31 nuclear magnetic resonance study, 539  
 myogenic depolarization and contraction, middle cerebral artery, 565  
 sarcomere length-force relation, intact and skinned trabeculae, right ventricle, 755

**Calsequestrin**, microsomes and, isolated myocardium, 120

**Capacitance vessels, intramyocardial, functional characteristics, diastole, 476**

**Capillaries**  
 growth, myocardial infarction and, 26  
 permeability, interstitial norepinephrine release, neuronal uptake inhibition, 859

**Captopril**, renin-angiotensin system, vasopressin secretion, 829

**Carbamylcholine**, impulse length and, atrium, 96

**Cardiac action potential**, anisotropic heart muscle, propagated electrical activity, two-dimensional model, 461

**Cardiac arrhythmias:** *see Arrhythmias*

**Cardiac glycosides**  
 acetylstrophantidin effects, ventricular tissue, endogenous prostaglandins, 486  
 induced calcium alterations, phosphorus-31 nuclear magnetic resonance study, 539  
 inotropic effects of, intracellular sodium and, Purkinje fibers, 109

**Cardiac muscle**  
 anisotropic  
     electrical activity, reconstruction, two-dimensional model, 461  
     electrical uncoupling, extracellular potentials, 356  
 glycolytic products, damage to ischemic myocardium, 177  
 sarcomere length-force relation, intact and skinned trabeculae, right ventricle, 755

**Cardiac output**  
 maximal oxygen consumption, pericardiectomy effect, 523  
 vasopressin, antidiuretic activity, dehydration, 631

**Cardiac pacing**, valvular aortic stenosis, myocardial blood flow during, 47

**Cardiomyopathy**, load regulation, 692

**Cardiovascular function**, histamine effects, 1

**Carotid artery**, bovine, smooth muscle cells, pharmacology and force development, 399

**Catalase**, arrhythmias, reperfusion-induced, oxygen-derived free radicals, 331

**Catecholamines**  
 central, baroreflex potentiation, vasopressin, 882  
 circulating,  $\alpha_1$ -adrenergic coronary vasoconstriction and, 68

**Central nervous system**, renal sympathetic nerve activity, urinary sodium excretion,  $\beta_2$ -adrenoceptor control, 241

**Cerebral arteries, middle**, myogenic depolarization and contraction, 565

**Chains, heavy and light**, myosin transitions, bovine and human heart, 846

**Circulation:** *see Blood flow; Microcirculation*

**Circumventricular organs**, spontaneous hypertension, natriuretic peptide binding sites in, 389

**Circus movement**  
 refractory excitable gap, atrial reentry, anatomic barrier, 495  
 wavelength of cardiac impulse and, 96

**Clathrin**, microsomes and, isolated myocardium, 120

**Coated vesicles**, clathrin in, corbular sarcoplasmic reticulum, 120

**Coronary artery**  
 morphometry, left ventricular hypertrophy, 38  
 spasm, histamine-induced, 1  
 thromboxane A<sub>2</sub> release, epinephrine potentiation of, 172  
 vasodilator substance, platelet-activating factor, 218

**Coronary occlusion**  
 acutely ischemic myocardium, lateral border, functional impairment, 570  
 systolic bulging, acutely ischemic myocardium, mechanical characteristics, 209

**Coronary reserve**, left ventricular hypertrophy, valvular aortic stenosis and, 47

**Coronary venous system**, intramyocardial capacitance vessels, functional characteristics, diastole, 476

**Creatine kinase**, flux, oxygen consumption and, noncontracting heart, 378

**Crossbridges**  
 myoplasmic calcium, myosin phosphorylation, arterial smooth muscle, 803  
 sarcomere length-force relation, intact and skinned trabeculae, right ventricle, 755

**Cyclic adenosine monophosphate**,  $\alpha_1$ -adrenergic receptor number regulation, aortic smooth muscle cells, 292

**Cyclic guanosine monophosphate**  
 contraction inhibition, phosphatidylinositol hydrolysis, aorta, 407  
 oxygen-dependent tension, vascular smooth muscle, endothelium, 341

**Cytoskeleton**, protein, spectrin-like, endothelial cells, 605

**D**

**Dehydration**, vasopressin, antidiuretic activity, 631

**Denerivation**, anterior eye chamber transplants, nerves and blood vessels, trophic interactions, 641

**2-Deoxyglucose**, uptake, adult heart cells, 157

**Desensitization**, lymphocyte  $\beta$ -receptors, 384

Desferrioxamine, arrhythmias, reperfusion-induced, oxygen-derived free radicals, 331  
 Desipramine, interstitial norepinephrine release, neuronal uptake inhibition, 859  
 Dextran sulfate, injection, kininogen, cleavage site, 595  
 Diastole, intramyocardial capacitance vessels, functional characteristics, 476  
 Diphenhydramine, platelet-activating factor, coronary artery vasodilator substance, 218  
 Doppler measurements, laser velocimeter, intramyocardial capacitance vessels, 476

**E**

Echocardiography, acutely ischemic myocardium, lateral border, functional impairment, 570  
 Editorial, I  
 Electrical conditioning, latissimus dorsi muscle, histochemical and fatigue characteristics, 298  
 Electron microscopy, hypertension and left ventricular hypertrophy, morphometry of coronary vessels in, 38  
 Endothelial cells  
     oxygen-dependent tension, vascular smooth muscle, 341  
     vascular, cytoskeletal protein, spectrin-like, 605  
 Endothelium  
     adenosine triphosphate, vascular tone regulation, 319  
     oxygen-dependent tension, vascular smooth muscle, 341  
 Endothelium-dependent relaxation  
     acetylcholine-induced, guanylate cyclase stimulation, arteries, 531  
     atherosclerosis, acetylcholine, thrombin, 783  
 Endothelium-derived relaxant factor, hypercholesterolemia, vascular reactivity, 552  
 Energy metabolism, myocardial stretch, 378  
 Entrainment, sinoatrial node, pacemaker cells, mathematical model, 706  
 Environmental stress, renal sympathetic nerve activity, urinary sodium excretion,  $\beta_2$ -adrenoceptor control, 241  
 Epinephrine  
     reentrant arrhythmias, wavelength and, 96  
     thromboxane A<sub>2</sub> release and, platelets, heart, 172  
 Exercise  
     coronary tone during, circulating catecholamines and, 68  
     submaximal and maximal upright, stroke volume regulation, 281

**F**

Fatigue testing, conditioned latissimus dorsi muscle, histochemical and fatigue characteristics, 298  
 Fatty acids, guanylate cyclase stimulation, endothelium-derived factor, acetylcholine-induced, 531

Fluorescein isothiocyanate, dextran 150, adenosine and bradykinin, microvascular permselectivity, 341  
 Forskolin, cyclic adenosine monophosphate,  $\alpha_1$ -adrenergic receptor number regulation, vascular smooth muscle, 292  
 Free radicals  
     oxygen-derived, arrhythmias, reperfusion-induced, 331  
     scavenger effects, stunned myocardium, 148  
 Functional border zone, acutely ischemic myocardium, 570

**G**

Glomerular filtration rate, calcium channel blockade effects, renal vascular resistance, angiotensin-converting enzyme inhibition, 874  
 Glucose, uptake, adult heart cells, 157  
 Glutathione, arrhythmias, reperfusion-induced, oxygen-derived free radicals, 331  
 Glycolytic products, damage to ischemic myocardium, 177  
 Great cardiac vein, intramyocardial capacitance vessels, functional characteristics, diastole, 476  
 Guanylate cyclase, stimulation, endothelium-derived factor, acetylcholine-induced, 531

**H**

Heart  
     anisotropic cardiac muscle  
         electrical activity, reconstruction, two-dimensional model, 461  
         extracellular potentials, electrical uncoupling, 356  
     arrhythmias, free radicals, oxygen-derived, 331  
     circus movement in, wavelength of cardiac impulse and, 96  
     noncontracting, creatine kinase flux and oxygen consumption in, 378  
     ultrastructure, load regulation of cardiocytes, 692  
 Heart cells  
     adenosine formation, 193  
     adult, sugar uptake by, 157  
 Heart rate  
     angiotensin II, baroreceptor reflex, adrenocorticotropin hormone secretion, 816  
     sinoatrial node, pacemaker cells, mathematical model, 706  
     vagally induced phasic changes, sympathetic tone, atrioventricular node conduction, 584  
     vasopressin, antidiuretic activity, dehydration, 631  
 Hemodynamics  
     acutely ischemic myocardium, lateral border, functional impairment, 570  
     stroke volume regulation, exercise, submaximal and maximal upright, 281  
     systolic bulging, acutely ischemic myocardium, mechanical characteristics, 209  
     vasopressin, antidiuretic activity, de-

hydration, 631  
 Heparin, inhibition, smooth muscle mitogenesis and migration, 839  
 Histamine  
     bovine carotid artery, smooth muscle cells, pharmacology and force development, 399  
     cardiac arrhythmias and, 1  
     content, mammalian species, 1  
     release, drug-induced, 1  
 Homeostasis, body fluid, arterial peptides, 619  
 6-Hydroxydopamine  
     adrenergic regulation, myosin ATPase, 83  
 baroreflex potentiation, central catecholamines, vasopressin, 882  
     cardiac histamine and, 1  
 Hypercholesterolemia, effect, vascular reactivity, 552  
 Hyperkalemia, intracellular sodium activity, hypoxia/high potassium/acidosis combined effects, papillary muscle, 249

**Hypertension**

chronic, left ventricular hypertrophy and, morphology of coronary vessels in, 38  
 genetic, subfornical organ, atrial natriuretic peptide binding sites in, 389  
 myocardial performance, aging, 445  
 renal sympathetic nerve activity, urinary sodium excretion,  $\beta_2$ -adrenoceptor control, 241  
 renovascular, left ventricular hypertrophy and coronary vascular resistance, 47  
 smooth muscle cells, replication, 427  
 spontaneous, cardiac myocytes, ploidy levels, age-related changes, 137

**Hypertrophy**

age-related changes, ploidy levels, cardiac myocytes, 137  
 left ventricular, pressure overload, diastolic properties and hypoxia, 653  
 myocardial performance, hypertension, aging, 445

myocyte, myocardial infarction and, 26  
 Hypokalemia, impulse length and, atrium, 96

Hypoproteinemia, plasmapheresis, lung liquid conductance, 269

Hypotension, kininogen, cleavage site, dextran sulfate injection, 595

Hypothalamus,  $\beta_2$ -adrenoceptor control, renal sympathetic nerve activity, urinary sodium excretion, 241

Hypothermia, arrhythmias, wavelength and, 96

Hypoxia  
     adenosine formation, regulation, heart, 193

adenosine triphosphate, vascular tone regulation, 319

high potassium and acidosis, intracellular sodium activity and resting potential, papillary muscle, 249

left ventricular hypertrophy, pressure overload, diastolic properties and hypoxia, 653

myocytes, acyl carnitine, electrophysiological derangements, 230

myogenic depolarization and contraction, middle cerebral artery, 565

**I**

Infarction, myocardial: *see* Myocardial infarction

Insolitol phosphates, cyclic guanosine monophosphate, contraction inhibition, phosphotidylinositol hydrolysis, 407

Insulin, sugar uptake, control by metabolic demand, adult heart cells, 157

## Ischemia

adenosine triphosphate, vascular tone regulation, 319

cardiac, histamine release during, 1

## myocardial

glycolytic products in, 177

superoxide dismutase plus catalase, model, 148

reperfusion-induced arrhythmias, free radicals, oxygen-derived, 331

## Isoproterenol

adenosine formation, regulation, heart, 193

sugar uptake, control by metabolic demand, adult heart cells, 157

Isovolumic relaxation, systolic bulging, acutely ischemic myocardium, mechanical characteristics, 209

**K**

Kallikrein, kininogen, dextran sulfate injection, cleavage site, 595

Kidney, renal sympathetic nerve activity, urinary sodium excretion,  $\beta_2$ -adrenoceptor control, 241

Kininogen, cleavage site, dextran sulfate injection, 595

**L**

## Lactate

damage, ischemic myocardium, 177

production, metabolic demand and contracture, heart cells, 157

Laser doppler velocimeter, intramyocardial capacitance vessels, functional characteristics, diastole, 476

## Letter to the Editor

myocardial mechanics, 310

plasma and brain angiotensin, nephrectomy and HPLC, 411

sarcomere relaxation by laser diffraction, real-time kinetics, 896

Lithium, cellular and subcellular transport, sodium/magnesium/calcium, vascular smooth muscle, 790

Load regulation, cardiocytes, 692

Lumbar nerves, arginine vasopressin, baroreflexes and, 17

Lung, liquid conductance, plasmapheresis, hypoproteinemia, 269

Lung C-fibers, vagal afferent stimulation, lung edema, 512

Lymphocytes,  $\beta$ -adrenergic receptor, characterization by photoaffinity labeling, 384

**M**

Magnesium, sodium and calcium transport, cellular and subcellular, vascular smooth muscle, 790

Mannitol, arrhythmias, reperfusion-in-

duced, oxygen-derived free radicals, 331

## Membrane potential

acetylstrophantidin effects, ventricular tissues, endogenous prostaglandins, 486

experimental myocardial infarction, intracellular potassium, sodium activity after healing, 202

intracellular sodium activity, hypoxia/high potassium/acidosis combined effects, papillary muscle, 249

Mepacrine, guanylate cyclase stimulation, endothelium-derived factor, acetylcholine-induced, 531

3-O-Methylglucose, uptake, adult heart cells, 157

4-Methylhistamine, infusion, AV node pacemaker acceleration, 1

Methysergide, platelet-activating factor, coronary artery vasodilator substance, 218

Microcirculation: *see also* Blood flow adenosine and bradykinin, microvascular permselectivity, macromolecules, 341

coronary, transcoronary macromolecular leakage, nisoldipine and, 127

lung liquid conductance, plasmapheresis, hypoproteinemia, 269

myogenic depolarization and contraction, middle cerebral artery, 565

Microfluorimetry, cultured cardiocytes, 692

## Microspheres

acutely ischemic myocardium, lateral border, functional impairment, 570

vasopressin, antidiuretic activity, dehydration, 631

Mitochondria, cellular and subcellular transport, sodium/magnesium/calcium, vascular smooth muscle, 790

## Models

sinatrial node, pacemaker cells, heart rate, 706

stunned myocardium, contractile function in, superoxide dismutase and catalase effects, 148

Morphometry, coronary vessels in hypertension, 38

## Muscle

latissimus dorsi, conditioned, histochemical and fatigue characteristics, 298

papillary, intracellular sodium activity, hypoxia/high potassium/acidosis combined effects, 241

## Myocardial infarction

experimental, intracellular potassium, sodium activity after healing, 202

size, myocyte hypertrophy and capillary growth in, 26

## Myocardial ischemia

acyl carnitine, electrophysiological derangements, hypoxic myocytes, 230

lateral border, functional impairment, distribution, 570

left ventricular hypertrophy, pressure overload, diastolic properties and hypoxia, 653

systolic bulging, mechanical characteristics, 209

## Myocardium

adrenergic denervation supersensitivity, exercise and, 68

metabolism, induced calcium alterations, phosphorus-31 NMR study, 539

performance, hypertension, aging, 445

protection, calcium entry blocker nisoldipine, 127

stretch, energetics of, 378

stunned, free radical scavenger effects, 148

substitute, conditioned latissimus dorsi muscle, histochemical and fatigue characteristics, 298

tethering, circumferential shortening of midwall fibers, 678

## Myocytes

adenosine formation, regulation, heart, 193

hypoxic, acyl carnitine, electrophysiological derangements, 230

injury, cardiac myosin light chain 1 following calcium paradox, 166

ventricular, biochemical and ploidy levels, 137

volume, myocardial infarction and, 26

Myofilaments, calcium activation, differential pH effects, 721

Myogenic depolarization, contraction and, middle cerebral artery, 565

Myoglobin, content, cultured cardiocytes, 692

## Myosin

calcium activation, differential pH effects, myofilaments, 721

contractile protein, developmental changes, adenosine triphosphatase, 890

light chain 1, cardiac, following cardiac paradox, 166

myocardial performance, hypertension, aging, 445

phosphorylation, myoplasmic calcium, crossbridge cycle, 803

transitions, bovine and human heart, 846

Myosin ATPase, activity, adrenergic regulation of, 83

**N**

Nerves, blood vessels and, trophic interactions, anterior eye chamber transplants, 641

Neural control, coronary blood flow, during exercise, 68

Neural mechanisms, histamine, cardiac arrhythmias and, 1

Nisoldipine, microvascular damage prevented by, 127

Nitroglycerin, arterial pressure increases, baroreflex control of renal nerve activity, 17

Nitroprusside, renin-angiotensin system, vasopressin secretion, 829

Noradrenaline, adenosine triphosphate, vascular tone regulation, 319

Norepinephrine hypercholesterolemia effect, vascular reactivity, 552

interstitial release, neuronal uptake inhibition, 859

ryanodine, inhibited calcium release, aortic smooth muscle, 730  
Nuclear magnetic resonance, energetics, myocardial stretch, 378

**O**

Oscillatory afterpotentials, acetylstophantidin effects, ventricular tissues, endogenous prostaglandins, 486  
Ouabain, experimental myocardial infarction, intracellular potassium, sodium activity after healing, 202

**Oxygen**

consumption  
adenosine formation, heart, 193  
energetics of myocardial stretch, 378  
maximal, cardiac output and pericardectomy effect, 523  
demand, distribution throughout the wall, left ventricular mechanics, 664  
free radicals, arrhythmias, reperfusion-induced, 331  
myogenic depolarization and contraction, middle cerebral artery, 565  
tension, vascular smooth muscle, endothelium, 341

**P**

Pacemaker cells, sinoatrial node, mathematical model, 706

Papaverine, adenosine and bradykinin, microvascular permselectivity, macromolecules, 341

Parasympathetic neural activity, regional acetylcholine turnover and, heart, 372

Pericardectomy, effect, maximal oxygen consumption, cardiac output, 523

Permeability, lung liquid conductance, plasmapheresis, hypoproteinemia, 269

Permselectivity, microvascular, adenosine and bradykinin, macromolecules, 341

pH, differential effects, calcium activation, myofilaments, 721

Pharmacology, force development, bovine carotid artery, smooth muscle cells, 399

Phase response curves, heart rate, phasic changes, atrioventricular node conduction, 584

Phenylephrine, arterial pressure increases, baroreflex control of renal nerve activity, 17

Phorbol diester, calcium efflux,  $\alpha$ -adrenergic receptor number, vascular smooth muscle cells, 393

Phosphate, high energy, ischemic myocardium, 148

Phosphoglycerides, platelet-activating factor, coronary artery vasodilator substance, 218

Phosphorylation, protein, crossbridge cycle regulation, arterial smooth muscle, 803

Phosphotidylinositol, hydrolysis, cyclic guanosine monophosphate, contraction inhibition, 407

Photoaffinity labeling,  $\beta$ -adrenergic receptor, human lymphocyte, 384

Plasmapheresis, hypoproteinemia, lung liquid conductance, 269

Platelet-activating factor, coronary artery vasodilator substance, platelet-derived, 218

Platelets  
aggregation, occlusive coronary thrombus, 58

platelet-activating factor, coronary artery vasodilator substance, 218

Posture, stroke volume regulation, exercise, submaximal and maximal upright, 281

Potassium  
extracellular, reentrant arrhythmias and wavelength in, 96

hypoxia and acidosis, intracellular sodium activity, papillary muscle, 249

sodium activity, experimental myocardial infarction, regional changes, 202

Prazosin  
 $\alpha$ -adrenergic receptors, calcium efflux, vascular smooth muscle cells, 393  
cyclic adenosine monophosphate,  $\alpha_1$ -adrenergic receptor number regulation, vascular smooth muscle, 292

Propranolol,  $\beta$ -adrenergic supersensitivity and, myocardial, 68

Prostaglandin E<sub>1</sub>, cyclic adenosine monophosphate,  $\alpha_1$ -adrenergic receptor number regulation, vascular smooth muscle, 292

Prostaglandins, acetylstophantidin effects, canine ventricular tissues, 486

Protein  
contractile, developmental changes, adenosine triphosphatase, 890  
cytoskeletal, spectrin-like, endothelial cells, 605  
myofibrillar, cardiac myosin light chain 1 following calcium paradox, 166

Pulmonary edema  
lung C-fibers, vagal afferent, stimulation, 512  
lung liquid conductance, plasmapheresis, hypoproteinemia, 269

Pulmonary hemodynamics, lung liquid conductance, plasmapheresis, hypoproteinemia, 269

Purines, adenosine triphosphate, vascular tone regulation, 319

Purinoceptors, adenosine triphosphate, vascular tone regulation, 319

Purkinje fibers  
acetylstophantidin effects, ventricular tissues, endogenous prostaglandins, 486

histamine effects, 1  
normal and segmentally depressed, refractory changes, rate-dependent changes, 257

2-(2-Pyridyl)ethylamine, working ventricular cells and, 1

**R**

Radioimmunoassay, cardiac myosin light chain 1, following calcium paradox, 166

Ranitidine, histamine, ventricular arrhythmias and, 1

**Receptors**

$\beta$ -adrenergic, human lymphocyte, characterization by photoaffinity labeling, 384

autoradiography, atrial natriuretic peptide binding sites, subfornical organ, 389

pulmonary stretch, lung afferent C-fibers, edema, 512

Refractory period, rate-dependent changes, Purkinje fibers, normal and segmentally depressed, 257

Relaxation, cyclic guanosine monophosphate, contraction inhibition, phosphatidylinositol hydrolysis, 407

**Renal nerve**

hypothalamic  $\beta$ -adrenoceptor control, urinary sodium excretion, hypertension, 241

traffic, baroreflex control of, vasopressin effects, 17

Renal vascular resistance, calcium channel blockade effects, perfusion pressure, angiotensin-converting enzyme inhibition, 874

**Renin-angiotensin system**

baroreceptor reflex, adrenocorticotrophic hormone secretion, heart rate, 816

role, vasopressin secretion, 829

Reperfusion, arrhythmias, free radicals, oxygen-derived, 331

Rotenone, sugar uptake and, adult heart cells, 157

Ryanodine, inhibited calcium release, intracellular stores, aortic smooth muscle, 730

**S**

Saralasin, renin-angiotensin system, vasopressin secretion, 829

Sarclemma, acyl carnitine, electrophysiological derangements, hypoxic myocytes, 230

Sarcomere length, force relation, intact and skinned trabeculae, right ventricle, 755

Sarcoplasmic reticulum, electron dense coat, clathrin in, 120

Segment length, shortening, systolic bulging, acutely ischemic myocardium, 209

**Serotonin**

correlation with platelet aggregation, occlusive coronary thrombosis, 58  
hypercholesterolemia effect, vascular reactivity, 552

Sinoatrial node, pacemaker cells, dynamic interactions, mutual synchronization, 706

Sinus rate, H<sub>2</sub>-receptor-mediated increases in, histamine and, 1

**Smooth muscle**

arterial, myoplasmic calcium and myosin phosphorylation, crossbridge cycle, 803

**vascular**

cellular and subcellular transport, sodium/magnesium/calcium, 790  
cyclic adenosine monophosphate,  $\alpha_1$ -adrenergic receptor number regulation, 292

cyclic guanosine monophosphate, phosphotidylinositol hydrolysis, 407  
 inhibited calcium release, ryanodine, 730  
 myogenic depolarization and contraction, middle cerebral artery, 565  
 oxygen-dependent tension, endothelium, 341  
 postjunctional  $\alpha$ -adrenoceptors, postnatal growth, 867

**Smooth muscle cells**  
 bovine carotid artery, pharmacology, force development, 399  
 heparin inhibition, cellular proliferation and arterial injury, kinetics, 839  
 replication, vascular disease, 427  
 vascular: *see also* Vascular smooth muscle  
 calcium efflux,  $\alpha$ -adrenergic receptor number and phorbol ester modulation, 393  
 hypercholesterolemia effect, 552

**Sodium**  
 induced calcium alterations, phosphorus-31 nuclear magnetic resonance study, 539  
 intracellular  
   hypoxia/high potassium/acidosis combined effects, papillary muscle, 249  
   inotropic effects of veratridine, Purkinje fibers, 109  
 intracellular potassium, experimental myocardial infarction, regional changes, 202  
 magnesium and calcium transport, cellular and subcellular, vascular smooth muscle, 790  
 urinary excretion, renal sympathetic nerve activity,  $\beta_2$ -adrenoceptor control, 241

**Sodium-calcium exchange**, induced calcium alterations, phosphorus-31 nuclear magnetic resonance study, 539

**Sodium channel toxin**, inotropic effects of, Purkinje fibers, 109

**Sodium nitroprusside**, contractile function, stunned myocardium, model, 148

**Sonomicroscopy**  
 acutely ischemic myocardium, lateral border, functional impairment, 570  
 contractile function, stunned myocardium, model, 148  
 systolic bulging, acutely ischemic myocardium, mechanical characteristics, 209

**Spectrin**, cytoskeletal protein, endothelial cells, 605

**Stroke volume**  
 pericardectomy effect, maximal oxygen consumption, cardiac output, 523  
 regulation, exercise, submaximal and maximal upright, 281

**Substrates**, adhesion, load regulation of adult cardiocytes, 692

**Superoxide dismutase**, arrhythmias, reperfusion-induced, oxygen-derived free radicals, 331

catalase and, contractile function, stunned myocardium, model, 148

**Sympathectomy**, nerves and blood vessels, trophic interactions, anterior eye chamber transplants, 641

**Sympathetic ganglia**, arginine vasopressin, baroreflexes and, 17

**Sympathetic nerves**  
 adrenergic coronary tone, submaximal exercise, circulating catecholamines and, 68  
 renal, baroreflex potentiation, central catecholamines, 882

**Sympathetic nervous system**, heart rate, phasic changes, atrioventricular node conduction, 584

**Systolic bulging**, acutely ischemic myocardium, mechanical characteristics, 209

**T**

**Tachycardia**  
 histamine and, 1  
 myocardial blood flow, valvular aortic stenosis, 47  
 refractory excitable gap, atrial reentry, anatomic barrier, 495

**Thrombin**, acetylcholine, endothelium-dependent vascular relaxation, atherosclerosis, 783

**Thrombocytopenia**, platelet-activating factor, coronary artery vasodilator substance, 218

**Thrombosis**, occlusive coronary, plasma serotonin effects, 58

**Thromboxane A<sub>2</sub>**, epinephrine effects, platelets, heart, 172

**Thromboxane B<sub>2</sub>**, platelet aggregation, occlusive coronary thrombus, 58

**Todrin**, cytoskeletal protein, spectrin-like, endothelial cells, 605

**Transmembrane action potentials**, acyl carnitine, electrophysiological rearrangements, hypoxic myocytes, 230

**Transmembrane potential**, refractory changes, rate-dependent, Purkinje fibers, 257

**Transplants**, anterior eye chamber, nerves and blood vessels, trophic interactions, 641

p-Trifluoromethoxyphenylhydrazone, sugar uptake and, adult heart cells, 157

**Troponin**, calcium activation, differential pH effects, myofilaments, 721

**Tunica media**, large coronary arteries, ultrastructural analysis, hypertension and hypertrophy, 38

**U**

**Urinary excretion**, sodium, renal sympathetic nerve activity,  $\beta_2$ -adrenoceptor control, 241

**V**

Vagus nerve, stimulation, regional acetylcholine turnover and, heart, 372

**Vascular cells**, bovine carotid artery, pharmacology, force development, 399

**Vascular disease**, smooth muscle cells, replication, 427

**Vascular permeability**, transcoronary macromolecular leakage, nisoldipine and, 127

**Vascular reactivity**, hypercholesterolemia effect, 552

**Vascular relaxation**, endothelium-derived, calcium blocker PN200110, 305

**Vascular resistance**, vasopressin, antidiuretic activity, dehydration, 631

**Vascular smooth muscle**  
 magnesium and calcium transport, 790 tension, endothelium, 341

**Vascular tone**, regulation, adenosine triphosphate, 319

**Vasodilation**  
 adenosine and bradykinin, microvascular permselectivity, macromolecules, 341  
 adenosine triphosphate, vascular tone regulation, 319

**arterial peptides**, body fluid homeostasis, 619

**coronary**, left ventricular hypertrophy secondary to valvular aortic stenosis, 47

**coronary artery vasodilator substance**, platelet-activating factor, 218

**endothelium-dependent vascular relaxation**, atherosclerosis, acetylcholine and thrombin, 783

**Vasodilators**, cyclic guanosine monophosphate, contraction inhibition, phosphotidylinositol hydrolysis, 407

**Vasopressin**  
 baroreflex potentiation, central catecholamines, 882  
 cardiovascular effects, antidiuretic activity, dehydration, 631  
 intravenous and intracerebroventricular, baroreflex control and, renal nerve traffic, 17  
 secretion, renin-angiotensin system, role, 829

**Ventricle**  
 automaticity, histamine and, 1  
 myosin transitions, bovine and human heart, 846

**Ventricle, left**  
 area shortening, midwall segment, regional comparison, 678  
 hypertrophy, morphometry of coronary vessels in, 38  
 mechanics, oxygen demand, distribution throughout the wall, 664  
 pressure overload, hypertrophy, diastolic properties and hypoxia, 653

**Ventricle, right**, sarcomere length-force relation, intact and skinned trabeculae, comparison, 755

**Ventricular cells**, working, histamine effects, 1

**Ventricular muscle**, extracellular calcium, cumulative depletions, 769

**Ventricular tissue**, acetylstrophantidin effects, endogenous prostaglandins, 486

**Veratridine**, inotropic effects of, intracellular sodium and, Purkinje fibers, 109

**W**

**Wavelength**, cardiac impulse, reentrant arrhythmias and, atrium, 96